

BEST AVAILABLE COPYSerial No. 10/090,862
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1. (currently amended) A packet relaying apparatus comprising:

first means for selecting one or more transmission destination virtual private network identifiers which are allowed to relay a received packet based on a transmission source virtual private network identifier related to the received packet;

second means for selecting one or more transmission destination domain identifiers corresponding to each of said one or more transmission destination virtual private network identifiers, the one or more transmission destination domain identifiers corresponding to a plurality of destination addresses and masks;

third means for collating, using a mask, a next relaying apparatus address of the received packet with each routing information stored in one or more domain relaying means which corresponds to each of the one or more domain identifiers to select the next packet relaying apparatus address; and

fourth means for transmitting the received packet in accordance with the next relaying apparatus address selected by the third means.

2. (previously presented) The packet relaying apparatus according to claim 1, wherein the first means selects one or more transmission destination virtual private network identifiers which are allowed to relay a received packet based on a transmission source virtual private network identifier corresponding to a receiving interface from which the received packet has been received.

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3. (previously presented) The packet relaying apparatus according to claim 1, wherein the first means selects one or more transmission destination virtual private network identifiers which are allowed to relay a received packet based on a transmission source virtual private network identifier corresponding to an Internet Protocol address of the received packet.

4. (previously presented) The packet relaying apparatus according to claim 1, wherein the first means selects, in accordance with priority order, one or more transmission destination virtual private network identifiers which have the priority order respectively and are allowed to relay a received packet based on the transmission source virtual private network identifier related to the received packet.

5. (previously presented) The packet relaying apparatus according to claim 1, wherein the second means selects, in accordance with priority order, one or more transmission destination domain identifiers having priority order respectively, corresponding to each of the one or more transmission destination virtual private network identifiers.

6. (previously presented) The packet relaying apparatus according to claim 1, wherein the first means further comprises a routing filter for filtering routing information to set the routing information selected with the routing filter to a domain relaying table.

7. (previously presented) The packet relaying apparatus according to claim 1, wherein the first means further comprises a routing filter for filtering the routing information to update one of at least two domain relaying tables;

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wherein the routing filter sets the routing information to said one of at least two domain relaying tables selected by the routing filter.

8. (currently amended) A packet relaying method comprising:

selecting one or more transmission destination virtual private network identifiers which are allowed to relay a received packet based on a transmission source virtual private network identifier related to the received packet;

selecting one or more transmission destination routing domain identifiers corresponding to each of said transmission destination virtual private network identifiers, the one or more transmission destination domain identifiers corresponding to a plurality of destination addresses and masks;

collating a next relaying apparatus address of the received packet with each routing information stored in one or more domain relaying means which correspond to each of the one or more domain identifiers to select the next relaying apparatus address; and

transmitting the received packet in accordance with the next relaying apparatus address selected by the collating step.

9. (currently amended) A packet relaying apparatus for transmitting a received packet to a next relaying apparatus in accordance with policy, comprising:

a packet receiving unit identifying a transmission source virtual private network identifier corresponding to a receiving interface identifier of a receiving interface from which the received packet has been received;

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first means for managing relationship between each of one or more transmission source virtual private network identifiers and one or more transmission destination virtual private network identifiers;

second means for selecting one or more transmission destination virtual private network identifiers which are allowed to relay a received packet based on said transmission source virtual private network identifier identified by the packet receiving unit; and

third means for sending, to the second means, a transmission source virtual private network identifier depending on an instruction such as a command from a terminal and receiving one or more transmission destination virtual private network identifiers corresponding to the transmission source virtual private network identifier, and displaying, on the terminal, relationship between the transmission source virtual private network identifier and the one or more destination virtual private network identifiers,

wherein the received packet is transmitted to a next hop relaying apparatus of a transmission destination virtual private network allowed by the second means.

10. (previously presented) The packet relaying apparatus according to claim 9, wherein the first means further comprises a table for storing a relationship between a transmission source virtual private network identifier and one or more transmission destination virtual private network identifiers.

11. (previously presented) The packet relaying apparatus according to claim 9, wherein the third means receives, from the terminal, a transmission source virtual private network identifier and corresponding one or more transmission destination virtual private network

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identifiers to be additionally registered, and requests additional registration to the second means, and the second means registers the transmission source virtual private network identifier and the corresponding one or more transmission destination virtual private network identifiers into the first means.

12. (previously presented) The packet relaying apparatus according to claim 9, wherein the third means requests deletion of a transmission source virtual private network identifier to be deleted which is received from the terminal to the second means and the second means deletes the transmission source virtual private network identifier.

13. (previously presented) The packet apparatus according to claim 9, wherein the third means requests to the second means, alteration of a name of a transmission source virtual private network identifier requested to change the name which is received from the terminal and a new transmission source virtual private network identifier and the second means alters the name of the transmission source virtual private network identifier to the new transmission source virtual private network identifier.

14. (original) A packet relaying apparatus for transmitting a received packet to a next relaying apparatus in accordance with policy, comprising:

first means for managing relationship between each of one or more transmission source virtual private network identifiers and one or more transmission destination virtual private network identifiers;

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second means for selecting one or more transmission destination virtual private network identifiers which are allowed to relay a received packet based on a transmission source virtual private network identifier related to the received packet by referencing to the first means;

third means for requesting, to the second means, a list of one or more transmission destination routing domains identifiers corresponding to each of one or more transmission destination virtual private network identifiers set in a domain relaying policy table based on an instruction as a command from a terminal, the instruction having one or more transmission destination virtual private network identifiers as an operand; and

fourth means for extracting the one or more transmission destination routing domain identifiers from the domain relaying policy table based on the request received from the third means and extracting one or more transmission destination routing domains identifiers corresponding to each of the transmission destination virtual private network identifiers;

wherein the third means displays, on the terminal, the extracted each transmission destination virtual private network identifiers and the list of the one or more transmission destination routing domains corresponding to each of the transmission destination virtual private network identifiers.

15. (currently amended) A packet relaying apparatus comprising:

a network relaying unit selecting one or more transmission destination virtual private network identifiers which are allowed to relay a received packet based on a transmission source virtual private network identifier related to the received packet;

a domain relaying unit selecting one or more transmission destination domain identifiers corresponding to each of said one or more transmission destination virtual private network

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identifiers, the one or more transmission destination domain identifiers corresponding to a plurality of destination addresses and masks;

a routing information management unit collating, using a mask, a next relaying apparatus address of the received packet with each routing information stored in one or more domain relaying tables which corresponds to each of the one or more domain identifiers to select the next relaying apparatus address; and

a packet relaying unit transmitting the received packet in accordance with the next relaying apparatus address selected by the routing information management unit.

16. (previously presented) The packet relaying apparatus according to claim 15, wherein the network relaying unit selects one or more transmission destination virtual private network identifiers which are allowed to relay a received packet based on a transmission source virtual private network identifier corresponding to a receiving interface from which the received packet has been received.

17. (previously presented) The packet relaying apparatus according to claim 15, wherein the network relaying unit selects one or more transmission destination virtual private network identifiers which are allowed to relay a received packet based on a transmission source virtual private network identifier corresponding to an Internet Protocol address of the received packet.

18. (previously presented) The packet relaying apparatus according to claim 15, wherein the network relaying unit selects, in accordance with priority order, one or more transmission destination virtual private network identifiers which have the priority order respectively and are

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allowed to relay a received packet based on the transmission source virtual private network identifier related to the received packet.

19. (previously presented) The packet relaying apparatus according to claim 15, wherein the routing information management unit selects, in accordance with priority order, one or more transmission destination domain identifiers having priority order respectively, corresponding to each of the one or more transmission destination virtual private network identifiers.

20. (previously presented) The packet relaying apparatus according to claim 15, wherein the network relaying unit further comprises a routing filter for filtering routing information to set the routing information selected with the routing filter to a domain relaying table.

21. (previously presented) The packet relaying apparatus according to claim 15, wherein the network relaying unit further comprises a routing filter for filtering the routing information to update one of at least two domain relaying tables;

wherein the routing filter sets the routing information to said one of at least two domain relaying tables selected by the routing filter.

22. (canceled)

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